

Dust Mitigation for the Lunar Surface, Phase I

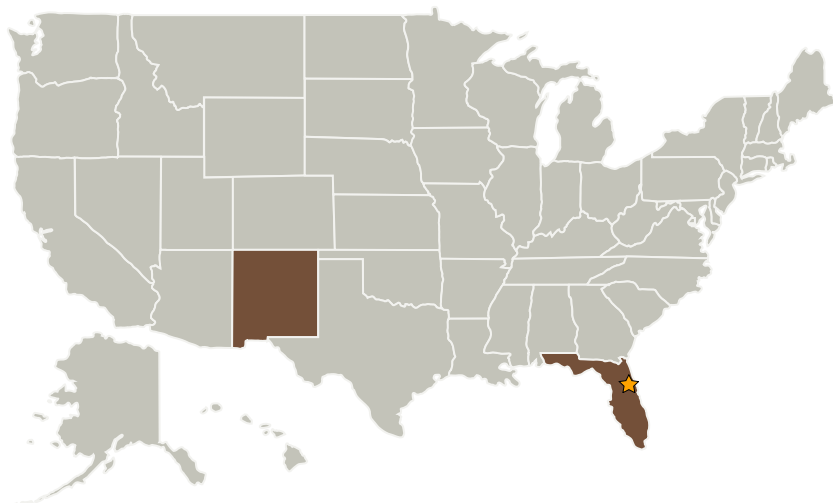
Completed Technology Project (2009 - 2009)



Project Introduction

The lunar surface is to a large extent covered with a dust layer several meters thick. Known as lunar regolith, it poses a hazard in the form of dust clouds being generated by all forms of gas expansions in the high vacuum environment of the lunar surface. This is especially pronounced during spacecraft operations. Instruments placed on the moon by the Apollo mission showed marked degradation due to damage from dust released during the lander's takeoff. Since there is no air movement to remove the dust after it is deposited, it is essential that dust is not displaced during everyday operations of a permanent lunar installation. Adherent Technologies, Inc. (ATI) has over the last decade developed a number of specialty UV curing resins for NASA applications in space. ATI is proposing to develop a resin and dispenser system to coat large areas of lunar surface around landing pads and atmosphere locks with a thin, dust-stabilizing coating. The coating will be UV stable and elastic enough to weather the temperature extremes of a lunar day and night cycle. Special emphasis will be given to a low outgassing, solvent-free system that does not contaminate the lunar atmosphere.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Adherent Technologies, Inc.	Supporting Organization	Industry	Albuquerque, New Mexico

Primary U.S. Work Locations

Florida	New Mexico
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX07 Exploration Destination Systems
 - └ TX07.2 Mission Infrastructure, Sustainability, and Supportability
 - └ TX07.2.5 Particulate Contamination Prevention and Mitigation